

## REMARKS

This responds to the Office Action dated 22 April 2005. Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and following remarks. Claims 2, 5, 17, 42, 43, 49, and 50 have been amended. Claims 2 and 5 are written in independent form, and have broadened from their previous scope. Claim 17 has been amended to move “electrical feedthru” from the preamble to the body of the claim, and therefore has not been narrowed and retains its previous scope. Claims 43 and 49 have been rewritten in independent form and retain their previous scope. Claims 19-41 and 46 were previously withdrawn. New claim 51 has been added. Therefore, claims 1-18, 42-45, and 47-51 remain pending in the application.

### Allowable Claims

Applicant acknowledges the allowance of claims 6, 7, and 45. Applicant also acknowledges that claims 2 and 5 would be allowable if each is written in independent form. Claims 6, 7, and 45 have not been amended and retain their previous scope. Claims 2 and 5 have been rewritten in independent form (without the “microchip” limitation, as the Examiner’s reasons for allowance have nothing to do with the microchip). Claim 2 was deemed allowable by the Examiner because “a channel formed in the external surface, wherein the electrical conductive transmission line is disposed in the channel and bonded thereto...[is] neither disclosed nor taught by the prior art of record, alone or in combination.” However, the Examiner rejected claim 43, even though it contains language similar to the language of claim 2 and conforms to the Examiner’s “reasons for allowance.” Applicant assumes that claim 43 was inadvertently rejected and intended to be allowable for the same reasons recited by the Examiner

with respect to claim 2. Therefore, claim 43 has been rewritten in independent form and retains its previous scope. In any case, based on the inconsistency between the allowance of claim 2 and the rejection of claim 43, any subsequent action rejecting claim 2 or 43 must be non-final to afford Applicant an adequate opportunity to respond.

**Claim Rejections – 35 U.S.C. § 102**

The Examiner rejected claims 10, 1, 3, 4, 11-16, 47, and 48 under 35 U.S.C. § 102(b) as being anticipated by Koepke (U.S. Pat. No. 5,015,207, hereafter “Koepke”). The Examiner alleged that Koepke discloses all of the limitations recited in the rejected claims, including “a microchip (not shown) adhered to the core (20).” Applicant respectfully traverses the rejection.

As the Examiner knows, for a prior art reference to anticipate in terms of 35 U.S.C. § 102, each and every element of the claimed invention must be *identically* shown in a single reference. *Diveritech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677, (Fed. Cir. 1988). Nevertheless Koepke does not identically disclose or suggest a microchip *adhered to the core*. The Examiner cites Koepke at column 3, lines 59-64, column 4, lines 48-51, and column 5, lines 55-59 in support of an identical disclosure of a microchip adhered to the core. However, rather than describing or showing a microchip adhered to the core, each of the Koepke citations describes bonding pads (24) “that facilitate wire bonding to integrated circuit chips housed in the package.” The “package” is shown and described as a “flat pack” (FIG. 3B) or “plug in package” (FIG. 3A). The Koepke bonding pads (24) are metallized and are not suitable for adherence to a microchip. Nor is a metallized bonding pad (24) part of the “core” to which the microchip must be adhered. The “core” is covered by the metallic bonding pad (24), rendering adherence between the “core” and any microchip impossible. Each instance recited by the

Examiner clearly states that any microchip is *wire bonded* to the bonding pads (24), not *adhered to the core*. As the Examiner knows, a “bonding pad” is an electrically conductive (not insulative) contact area on the substrate to which a fine wire is connected, not a chip adherence mount. Any microchips disclosed by Koepke (and none are even shown) are electrically connected by wire bonds to the bonding pads (24), but they are never disclosed or suggested to be *adhered* to the core itself as recited in the claims. The Applicant is not aware of any definition of “adhere” that would include a wire bond electrical connection to a bonding pad. The standard definition of “adhere” is to stick fast by or as if by suction or glue. *The American Heritage® Dictionary of the English Language*, Fourth Edition Copyright © 2000. A wire bond electrical connection does not conform to this or any other known definition of “adhere.” And even if the unseen Koepke microchip was adhered to the bonding pad (24) (which it is not), the bonding pad is metallized and therefore cannot be the “core.” Claims 10, 1, 3, 4, 11-16, 47, and 48 all recite a chip or microchip “adhered to the core,” which Koepke does not disclose or suggest.

Moreover, the identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Koepke fails to disclose the limitations of claims 10, 1, 3, 4, 11-16, 47, and 48 in as complete detail as is contained in the claims. Koepke does not disclose any adherence of a microchip to an electrical feedthru core. Claims 10, 1, 3, 4, 11-16, 47, and 48 require a chip or microchip adhered to--not wire bonded to--the core itself (the “core” cannot be a metal bonding pad, the “core” must be an electrical insulator as recited in the claims). The identical level of detail is completely missing from Koepke, namely because Koepke makes it clear that any microchips are part of a separate “flat pack” (FIG. 3B) or “plug in package” (FIG. 3A). *See* col. 2, ll. 29-33; col. 3, l. 63; col. 4, l.

50; col. 5, ll. 63-66. There is no disclosure in Koepke of a microchip adhered to anything. Instead the Koepke microchips are only mentioned in passing as part of a separate package. The microchips are not even shown by Koepke. Therefore, Koepke does not disclose the complete details recited in the claims. Accordingly, Applicant respectfully requests that the rejection of claims 10, 1, 3, 4, 11-16, 47, and 48 under 35 U.S.C. § 102(b) over Koepke be withdrawn.

Applicant also notes that claims 11, 14, and 48 recite a “sensor chip.” Applicant again contends that the identical invention must be shown in as complete detail as is contained in the claims. *See Richardson*. The Examiner has not even alleged the Koepke identically discloses a *sensor chip*. Therefore, Applicant may demur and the rejection of at least claims 11, 14, and 48 should be withdrawn. Nevertheless, Applicant notes that indeed Koepke does not disclose or suggest a sensor chip. Accordingly, Applicant respectfully requests that the rejection of claims 11, 14, and 48 under 35 U.S.C. § 102(b) over Koepke be withdrawn.

In addition, claim 12 states that “the core, the electrically conductive transmission line, and the microchip are disposed in a MEMS sensor package.” The Examiner points to column 2, lines 20-25 of Koepke as allegedly identically disclosing a MEMS sensor package in the detail required for a proper § 102 rejection. Applicant recites column 2, lines 20-25 of Koepke below:

The multi-path feed-thru lead of the present invention has particular utility in combination with microcircuit packages to increase the conductive pathway density thereof without any significant decrease in the structural integrity thereof and/or increase in the size and weigh thereof.

Applicant cannot discern anything MEMS-related in the cited paragraph, or in another part of the Koepke reference. The Examiner knows that a microcircuit is not properly characterized as a MEMS device, let alone a “MEMS sensor package.” MEMS devices and packages refer to micro electro mechanical systems. A microcircuit is not mechanical, nor is a microcircuit

understood by one of ordinary skill in the art as a MEMS device or a MEMS sensor package. Koepke fails to identically disclose a MEMS sensor package. Further, even if the Koepke “microcircuit” was a MEMS device, it is not disclosed to the same level of detail as claim 12 (“a MEMS *sensor* package”), and therefore the rejection of claim 12 is improper. Accordingly, Applicant respectfully requests that the rejection of claim 12 under 35 U.S.C. § 102(b) over Koepke be withdrawn. However, if the rejection of any of claims 11, 12, 14, or 48 remains, in light of the absence of any reference specifically teaching the limitations *as claimed*, Applicant respectfully requests that the Examiner submit an affidavit in accordance with 37 C.F.R. §1.104(d)(2) substantiating the allegation. Applicant also request opportunity to contradict the Examiner’s affidavit as prescribed by the rule.

The Examiner rejected claims 17, 42, 43, and 49 under 35 U.S.C. § 102(b) as being anticipated by Hedden, Jr. (U.S. 3,148,356, hereafter “Hedden”). The Examiner alleged that Hedden discloses all of the elements recited in the rejected claims. The Examiner stated that Hedden discloses a core (12) comprising an electrical insulator, an electrically conductive transmission line (14) disposed across a portion of the external surface (Fig. 2) of the core (12), and an insulating mold (62, 64, Figs. 7, 8, 10, 11, 13 referring to a circuit board) disposed over the electrically conductive transmission line (14) and the external surface. The Examiner also stated that the core (12) comprises a rod (referring to column 2, lines 52-56).

Applicant notes that Hedden generally teaches a hollow printed circuit board connector, not an “electrical feedthru,” and therefore should not be used as a basis for rejecting any of the claims. Nevertheless, even if the connector of Hedden is deemed an electrical feedthru, the *feedthru* itself must include an insulating mold. The Examiner has pointed to the printed circuit board (62, 64) as the insulating mold of Hedden. However, the printed circuit board (62, 64) of

Hedden is the very item the connector is connecting through or feeding through. The Hedden connector (10) does not *comprise* the printed circuit board, the printed circuit board is what the connector extends through. The Hedden connector (10) has no meaning as an electrical feedthru if it includes the printed circuit board as part of the connector. Printed circuit boards are not part of “an electrical feedthru.” If the printed circuit board is part of the “feedthru” structure as claimed, what is being fed through? Accordingly, Applicant respectfully requests that the rejection of claim 17 under 35 U.S.C. § 102(b) over Hedden be withdrawn.

Similarly, with regard to amended claim 42, Hedden fails to disclose an electrical feedthru that includes “an insulating over-mold disposed over the disk.” The feedthru and the structure being fed through (printed circuit board) cannot logically comprise the same element. It makes no sense to have a feedthru feeding through itself. A feedthru feeds from one place to another, not to itself. Accordingly, Applicant respectfully requests that the rejection of claim 42 under 35 U.S.C. § 102(b) over Hedden be withdrawn.

The Examiner rejected claim 43 over Hedden even though the “reasons for allowance” state that “a channel formed in the external surface, wherein the electrical conductive transmission line is disposed in the channel and bonded thereto...[is] neither disclosed nor taught by the prior art of record, alone or in combination.” Claim 43 recites “a plurality of channels disposed in the external surface, wherein each of the plurality of electrically conductive transmission lines is disposed in one of the plurality of channels and is bonded thereto.” Therefore, there is no logical connection between the rejection of claim 43 and the “reasons for allowance” and Applicant presumes the rejection was an oversight. Moreover, Hedden’s “conductor elements” are “formed *on the surfaces* of the insulating material by standard printing, plating, or etching techniques,” not in any channels. Col. 2, ll. 57-63. As the Examiner correctly

stated, Hedden does not disclose or suggest channels disposed in the external surface or electrically conductive transmission lines disposed in and bonded to one of the channels. Accordingly, Applicant respectfully requests that the rejection of claim 43 under 35 U.S.C. § 102(b) over Hedden be withdrawn.

Claim 49 has been rewritten in independent form. The Examiner rejected claim 49 over Hedden by stating that “the plurality of electrically conductive transmission lines (14) extend between two distinct environments of different pressure (see figure 11).” FIG. 11 of Hedden shows a connector element (68) extending through a circuit board. FIG. 11; col. 3, ll. 70-75; col. 4, ll. 1-8. However, there is no indication that the *pressure* is different, or even that the environments are distinct, on either side of the circuit board (62, 64). Applicant again contends that a proper § 102 rejection requires that the identical invention must be shown *in as complete detail* as is contained in the claim. *Richardson*. Hedden does not even show or mention distinct environments or different pressures. Any detail of distinct environments and different pressures is completely missing. Therefore the rejection under § 102 is improper. Even if the Hedden connector is not hollow (and all of the actual disclosed embodiments are hollow), all of the locations traversed by the Hedden connectors are open to the *same* environment. Standard printed circuit boards (62, 64) are not intended or able to isolate distinct environments, and especially different pressures, and in any case Hedden does not identically show or suggest distinct environments or pressures. The Examiner has failed to establish a *prima facie* case of anticipation. The Examiner has not even alleged with any support or specificity that Hedden discloses distinct environments of different pressure. Accordingly, Applicant respectfully requests that the rejection of claim 49 under 35 U.S.C. § 102(b) over Hedden be withdrawn. Nevertheless, if the rejection remains, in light of the absence of any reference specifically

teaching the limitation *as claimed*, Applicant respectfully requests that the Examiner submit an affidavit in accordance with 37 C.F.R. §1.104(d)(2) substantiating the allegation. Applicant also request opportunity to contradict the Examiner's affidavit as prescribed by the rule.

**Claim Rejections – 35 U.S.C. § 103**

The Examiner rejected claims 8, 9, 18, and 44 under 35 U.S.C. § 103 as being unpatentable over various combinations of Koepke, Hedden, Bickford et al. (U.S. Pat. No. 6,506,083), and Tower (U.S. Pat. No. 6,111,198). Claims 8, 9, and 18 depend from claim 10, and should therefore be allowable.

With regard to claim 44, the Examiner notes that although neither Hedden nor any of the other cited references teach a “disk having a gradually tapered first end,” it would have been an obvious matter of design choice to change the shape of the feedthru to one having a gradually tapered first end. Applicant respectfully disagrees.

As the Examiner knows, for a claim to be obvious, there must be a) a suggestion or motivation to combine reference teachings, b) a reasonable expectation of success, and c) the references must teach all of the claims limitations. MPEP § 706.02(j). As the Examiner admitted, none of the cited references disclose a disk with a gradually tapered first end. Therefore, the Examiner has not met his burden of establishing a *prima facie* case of obviousness. Moreover, the Examiner has not provided any motivation from the references for making a change to a gradually tapered first end. Accordingly, the § 103 rejection is improper and should be withdrawn.

Further, although the Examiner alleged that the Applicant “fail[ed] to attribute any significance...to the particular shape,” Applicant has in fact done so. Applicant contends that a



disk with a tapered first end is not simply a “change of shape” as characterized by the Examiner. The gradual taper is not simply a different shape with no articulated advantage. The specification clearly describes at least one advantage of the tapered shape. The specification and figures describe how the tapered shape facilitates wedged or sealed insertion between distinct environments not offered by the Hedden device shown in FIG. 2. Applicant also points to FIG. 5 and paragraph 30 of the present application, which show and describe how a taper guides or facilitates insertion of a feedthru into an aperture. Accordingly, Applicant respectfully requests that the rejection of claim 44 under 35 U.S.C. § 103 over Hedden be withdrawn. However, if the Examiner believes using a disk with a gradually tapered first end is obvious despite the lack of any such reference teaching, Applicant must again respectfully request that the Examiner submit an affidavit, subject to traverse, in accordance with 37 C.F.R. §1.104(d)(2) substantiating the allegation.

#### **Other Pending Claims**

Claim 50 has been amended and claim 51 has been added. Claims 50 and 51 both recite limitations not taught or suggested by the prior art. For example, claim 50 recites a core with a second end that is splined. FIG. 3 shows one such embodiment. Claim 51 recites one of the same limitations that the Examiner stated in his “reasons for allowance” indicating patentability.

**Conclusion**

Applicant respectfully submits that all claims should now be in condition for allowance. Applicant respectfully requests that the Examiner telephone the undersigned attorney if there are unresolved matters in the present application so that the examination process can be expedited.

Respectfully submitted,



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